

REMARKS

Overview

In the Office Action under reply, claims 1-31 are pending and have been rejected under 35 U.S.C. §103(a) as unpatentable over Araki et al., WO 01/74916 ("Araki"). Applicants acknowledge with appreciation the withdrawal of the rejection under 35 U.S.C. §103(a) over Araki et al., USPN 6,908,724.

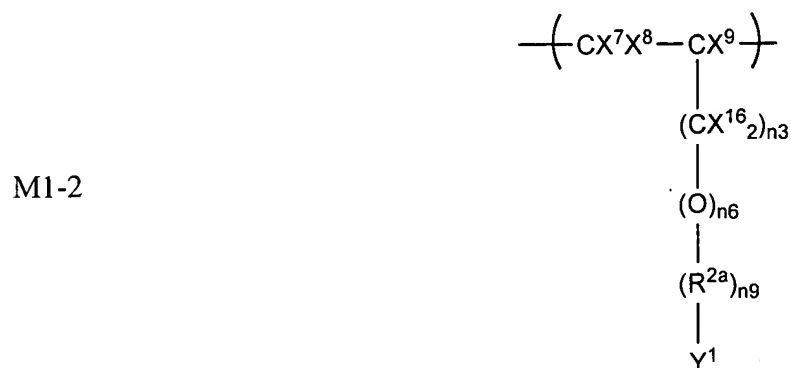
The rejection is traversed for at least the reasons set forth below.

Rejection under 35 U.S.C. §103(a)

Claims 1-31 stand rejected under 35 U.S.C. §103(a) as unpatentable over Araki. This rejection is traversed.

The Examiner cites Araki as disclosing a fluorine-containing polymer for use as a chemically amplified photoresist and having, for example, the structure: M1-M2-M3-N. M1 is allegedly similar to the instant monomer (II), M3 is allegedly similar to the instant monomer (I), M2 is an alicyclic monomer, and N is selected from monomers such as ethylene, vinyl ether, and others described in the reference.

The Examiner alleges that M1 of Araki is of structure similar to the instant monomer II, and cites pages 189-194 of Araki as evidence. On pages 189-194 of Araki, monomer M1 is described as having the structure of M1-2



wherein (in part) X^7 , X^8 , X^9 , and X^{16} are H or F; Y^1 is a functional group which is dissociated or degraded by an acid and is converted to carboxyl group by a reaction with an acid; R^{2a} is a divalent hydrocarbon group having 1 to 20 carbon atoms, a fluorine-containing alkylene group having 2 to 100 carbon atoms and ether bond or a fluorine-containing arylene group having 3 to

20 carbon atoms; n6 and n9 are 0 or 1; and n3 is 0, 1, or 2.¹ Thus, the compounds encompassed by M1 of Araki derive from vinyl compounds having an acid-degradable functional group that converts to a carboxyl group by reaction with an acid. Examples of acid-degradable groups are esters, and are shown on page 209 of Araki.

In contrast, formula (II) of the instant claims is as follows:



wherein R⁵ is C₁₋₁₂ alkyl, C₁₋₁₂ alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C₃₋₁₅ alicyclic, or R⁴ and R⁵ together form a five-, six-, or seven-membered ring. Examples of compounds that are encompassed by formula (II) are provided on page 14 of the original specification, and include vinyl ethers such as ethyl vinyl ether and t-butyl vinyl ether. One of ordinary skill in the art would immediately recognize that the definition of R⁵ does not include groups such as the acid-degradable groups described in Araki. Thus, compounds encompassed by formula (II) do not include those compounds with an acid-degradable functional group that converts to a carboxyl group by reaction with an acid. One of ordinary skill in the art would understand that compounds of formula (II) are vinyl ethers, and that reactions of the vinyl ethers described by formula (II) with acid do not produce carboxyl groups as described by Araki. Indeed, reaction of acid with the vinyl ethers encompassed by formula (II) will generate (for example) an alcohol group.

Clearly, then, the compounds of Araki differ from those of the instant claims, at least inasmuch as M1 of Araki is not equivalent to formula (II) of the application. For a rejection under 35 U.S.C. §103(a), however, the MPEP (§2142) lists three criteria that must be met in order for there to be a *prima facie* case of obviousness:

“First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there

¹ Because Araki is written in Japanese, these definitions were taken from column 145 of the related patent US 6,908,724. They are believed to be a translation of the definitions set forth in Araki at page 189.

must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.”


In order for there to be a *prima facie* case of obviousness, therefore, the Examiner must show that one of ordinary skill in the art would have found motivation to make *specific modifications* to the teachings of Araki in order to arrive at the claimed invention. This showing is absent in the Action, as the Examiner simply states that “[g]iven the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Araki et al choosing to employ the M1-M2-M3-N polymer either alone, or in combination with an additional novel polymer taught by the reference, which comprises monomers meeting the structural limitations of the instant monomers I and II...” The Examiner has failed to indicate how one of ordinary skill would have modified the materials of Araki, nor has the Examiner indicated any motivation for modifying the teachings of Araki (e.g., by combining Araki with another reference or by some suggestion within Araki itself). Modification would clearly be required to obtain the instant compounds having the structure of formula (II), which does not contain an acid-degradable functional group that converts to a carboxyl group by reaction with an acid, from a structure with the limitations provided in Araki for M1 (i.e., a structure that *must* contain an acid-degradable functional group that converts to a carboxyl group by reaction with an acid).

The monomer unit M1 differs from instant monomer (II), as described above, and the Examiner has not provided motivation for one of ordinary skill to modify M1 as would be required to arrive at the instant invention. Such motivation is, indeed, not present in Araki. Accordingly, since the Examiner has failed to provide a *prima facie* case of obviousness, and since the claimed invention is not rendered obvious by the teachings of Araki, applicant respectfully requests withdrawal of the rejection.

CONCLUSION

Applicants submit that the claims of the application are in condition for allowance. Applicants respectfully request withdrawal of the rejections, and prompt issuance of a notice of allowance. If the Examiner has any questions concerning this communication, or would like to discuss the application, the art, or other pertinent matters, a telephone call to the undersigned would be welcomed.

Respectfully submitted,

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